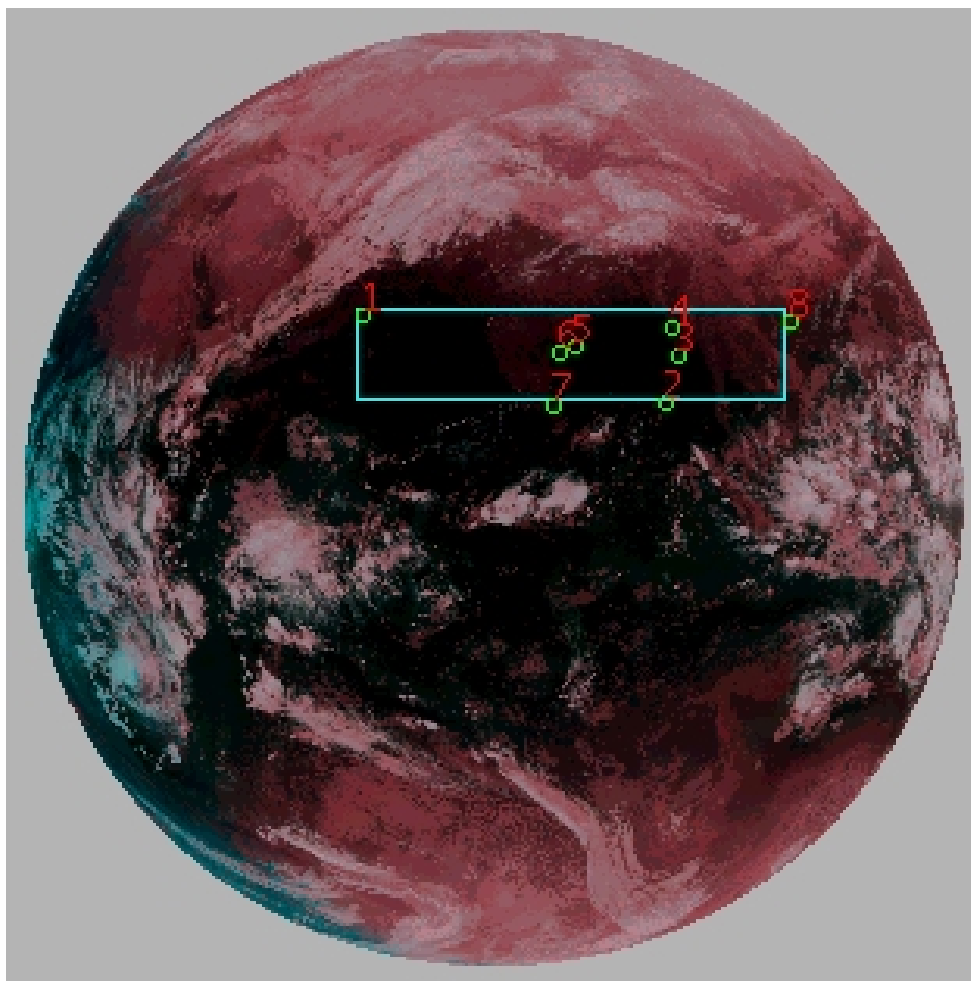


DQE Report: GDQE - Location parameters for INSAT-3DR-IMG STANDARD(FULL DISK) Product

Satellite INSAT-3DR **No Of Bands** 6 **Product Type** STANDARD
Sensor IMG **LvlOfProcess** L1B **Selected Band** 2-TIR1
DOP/Time 17-02-17/15:45 **Station ID** BES **Field View(deg)** 18.006
Res(Y,X) [Km] (4.0,4.0) **Res(Y,X) [uRad]** (112.0,112.0)

(81.042N,-7.157W)

(81.042N,155.157E)



(-81.042S,-7.157W)

(-81.042S,155.157E)

GCP Distribution overview for 3RIMG17FEB20171545L1BSTD

Image Width: 2805 **Image Height:** 2816 **No Of GCPs:** 8

GCP Coverage(%) 9.09 **(N-S)** 44.16 **(E-W)**

Location Error(E)

Legend — 0Km < E <= 50Km — 50Km < E <= 100Km — E >100Km

Location Error (Km)

| | Mean | Direction | Stddev | RMS |
|--------|---------|-----------|--------|--------|
| Along | 2.463 | N | 5.713 | 6.222 |
| Across | -11.630 | W | 3.516 | 12.150 |

Scale (Km)

| | Pixel Size | Stddev | %variation |
|---------|------------|--------|------------|
| Average | 4.379 | 0.335 | 9.466 |
| Along | 4.936 | 1.297 | 23.389 |
| Across | 4.568 | 0.818 | 14.200 |

Internal Distortion (in Pixels)

| | PeakToPeak | Mean | Stddev | RMS |
|--------|------------|--------|--------|-------|
| Along | 3.508 | -2.100 | 1.11 | 2.376 |
| Across | 2.850 | -0.020 | 1.05 | 1.051 |

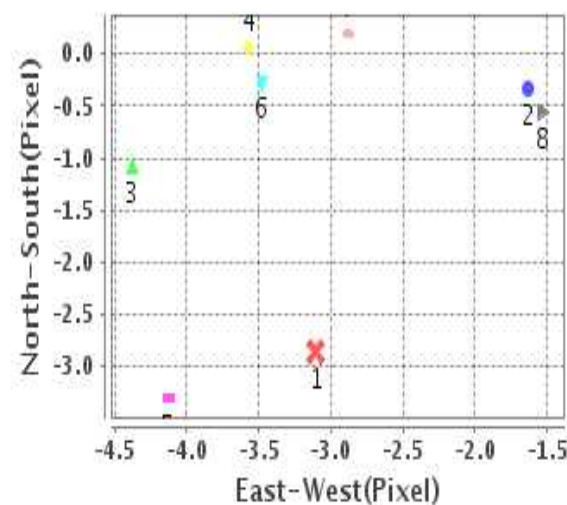
Attitude Residuals (Deg)

| Pitch | Roll | Yaw |
|----------|----------|----------|
| -0.01980 | -0.00748 | -0.09659 |

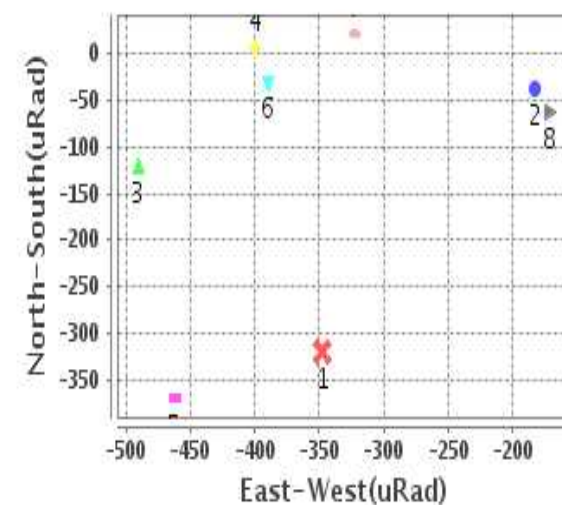
Reference Used

| Sensor | Resolution | Projection |
|--------|------------|------------|
| ETM | 500.00 | GGP |

Location Error For GCPs(Pixel)



Location Error For GCPs(uRad)



Detailed Product Information

Ancillary Info

| | | | |
|-------------------|---------------|---------------------------|------------|
| Satellite | INSAT-3DR | Generation Date | 17-02-17 |
| Sensor | IMG | DQE Date | 20-02-2017 |
| PassType | NONE | Aquisition Date | 17-02-17 |
| Imaging Mode | FULL_FRAME | Aquisition Time(GMT) | 15:45 |
| Sat Altitude(m) | 3.6E7 | Nominal Altitude(Km) | 3.6E7 |
| Station | BES | Predicted Altitude(Km) | 0.0 |
| Sat Location(deg) | 0.0 E | Nominal Center Lat(deg) | 0.0 |
| Format | hdf5-1.8.8 | Nominal Center Lon(deg) | 74.0 |
| LvlOfProcessing | STANDARD(FULL | Predicted Center Lat(deg) | 0.0 |
| DP JobId | 3RIMG_17FEB20 | Predicted Center Lon(deg) | 0.0 |
| ProductCode | NONE | | |
| Field View(deg) | 18.006 | | |

Projection Parameters

| | |
|-------------------------------|----------|
| Projection | None |
| Ellipsoid | WGS_84 |
| Datum | WGS_84 |
| Zone | NotAvail |
| Semi_Major_Axis(Km) | 6378.14 |
| Semi_Minor_Axis(Km) | 6356.75 |
| Standard_Parallel1(deg) | -999.99 |
| Standard_Parallel2(deg) | -999.99 |
| Projection_Origin_Lon(deg) | -999.99 |
| Projection_Origin_Lat(deg) | -999.99 |
| Projection_False_Easting(Km) | -999.99 |
| Projection_False_Northing(Km) | -999.99 |

Scene Center Desc

| | |
|-------------------|---------|
| Centre Lat(deg) | 0.0 |
| Center Lon(deg) | 74.0 |
| Centre Roll(deg) | -999.0 |
| Centre Pitch(deg) | -999.0 |
| Center Yaw(deg) | -999.0 |
| SunElevation(deg) | -999.99 |
| SunAzimuth(deg) | -999.99 |
| SatElevation(deg) | -999.99 |
| SatAzimuth(deg) | -999.99 |

Scene Corner Desc

| | |
|-------------|---------|
| NW_Lat(deg) | 81.042 |
| NW_Lon(deg) | -7.157 |
| SW_Lat(deg) | -81.042 |
| SW_Lon(deg) | -7.157 |
| NE_Lat(deg) | 81.042 |
| NE_Lon(deg) | 155.157 |
| SE_Lat(deg) | -81.042 |
| SE_Lon(deg) | 155.157 |

Band Wise Details

| | Res_AL(Km) | Res_AX(Km) | Image Height | Image Width |
|------|------------|------------|--------------|-------------|
| MIR | 4.0 | 4.0 | 2816 | 2805 |
| SWIR | 1.0 | 1.0 | 11264 | 11220 |
| TIR1 | 4.0 | 4.0 | 2816 | 2805 |
| TIR2 | 4.0 | 4.0 | 2816 | 2805 |
| VIS | 1.0 | 1.0 | 11264 | 11220 |
| WV | 8.0 | 8.0 | 1408 | 1402 |

GDQE Computation Base

| | | | | | | | |
|------------|----------------|-------------------------------|--------|------------------------|------------|---------------------|-----------|
| Projection | MER | Wildpoint Rejection Threshold | 2.60 | SemiMajorAxis(m) | 6378137.00 | Mode Of Computation | grid |
| Ellipsoid | WGS_84 | | -sigma | SemiMinorAxis(m) | 6356752.31 | Used Reference Type | REFINSREF |
| Datum | WGS_84 | Unit | pixels | Standardparallel1(deg) | 17.0 | | |
| Zone | Not Applicable | | | Standardparallel2(deg) | 17.0 | | |

* -999.99 : Not Applicable/Not Available

References

JobId : 3RIMG17FEB20171545L1BSTD

(-999.99 - Not Available/Not Computed)

| Ref.No | Source | File Name | Resolution (m) | Projection |
|--------|--------|-----------------|------------------|------------|
| 1 | ETM | world_Band1.img | 500.0 | GGP |

Location Accuracy

GCP Distribution Statistics

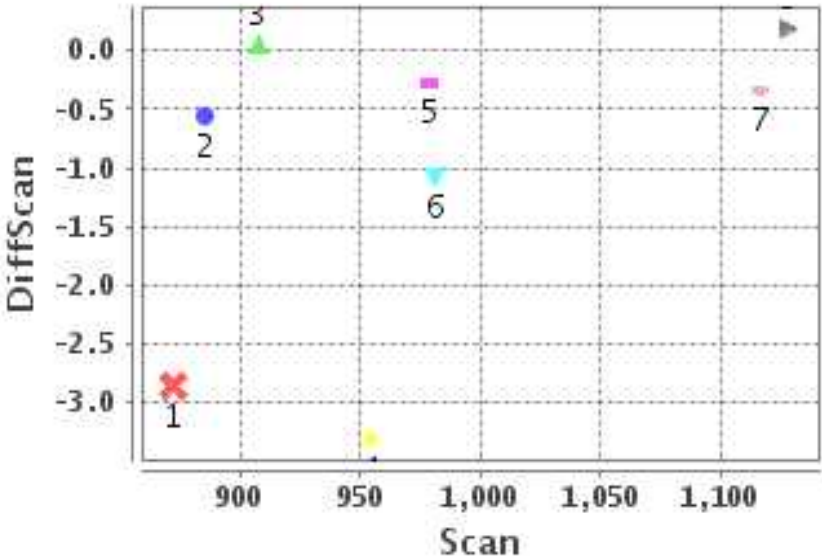
Image Width (pixels) : 2805 Image Height (pixels) : 2816 No of GCPs : 8

| | Mean | StdDev | Min | Max | Coverage(in %) |
|-----------------|--------|--------|--------|---------|----------------|
| GCP Scan | 977.9 | 91.6 | 871.8 | 1127.75 | 9.09 (N-S) |
| GCP Pix | 1717.9 | 342.7 | 1010.5 | 2249.25 | 44.16 (E-W) |

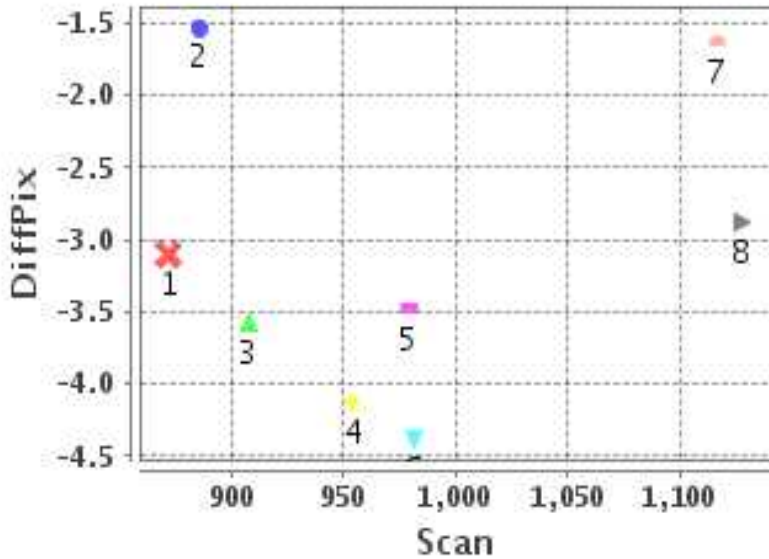
Identified Control Point details : (Differences are Reference - Product)

| No | Scan | Pix | DiffScan (line) | DiffPix (pixel) | DifLat (Km) | Dir | DifLon (Km) | Dir | Status |
|----|--------|--------|-----------------|-----------------|-------------|-----|-------------|-----|----------|
| 1 | 871.8 | 1010.5 | -2.9 | -3.11 | 9.511 | N | 12.012 | W | Accepted |
| 2 | 1116.8 | 1889.2 | -0.3 | -1.63 | 1.786 | S | 5.878 | W | Accepted |
| 3 | 981.2 | 1922.8 | -1.1 | -4.38 | 2.559 | N | 16.086 | W | Accepted |
| 4 | 907.5 | 1902.5 | 0.1 | -3.57 | 2.512 | S | 14.078 | W | Accepted |
| 5 | 954.0 | 1623.2 | -3.3 | -4.13 | 13.547 | N | 15.455 | W | Accepted |
| 6 | 979.0 | 1582.2 | -0.3 | -3.48 | 1.365 | N | 12.838 | W | Accepted |
| 7 | 1127.8 | 1563.5 | 0.2 | -2.88 | 4.070 | S | 9.399 | W | Accepted |
| 8 | 885.2 | 2249.2 | -0.6 | -1.53 | 1.094 | N | 7.298 | W | Accepted |

Error(Pixels) Vs. GCPScan



Error(Pixels) Vs. GCPScan



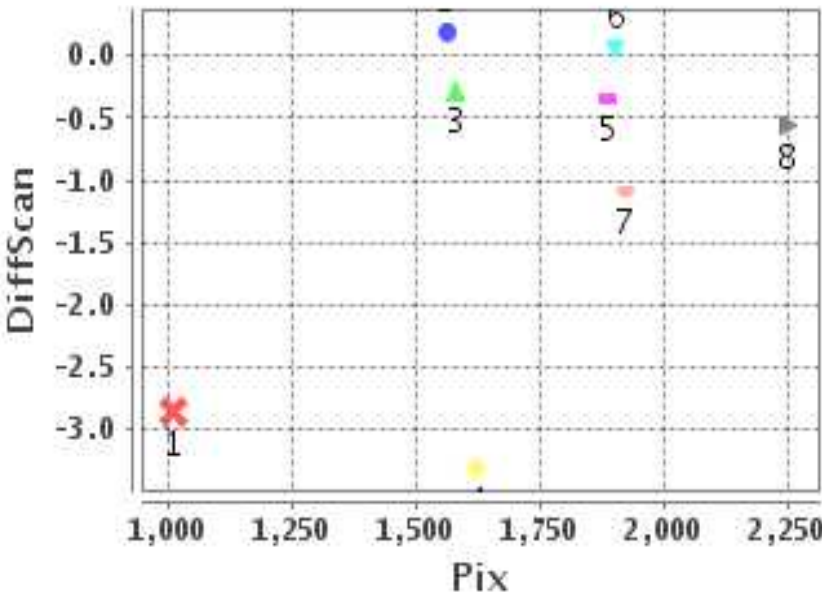
Number Of Points

| | |
|-------|---|
| North | 5 |
| South | 3 |
| East | 0 |
| West | 8 |

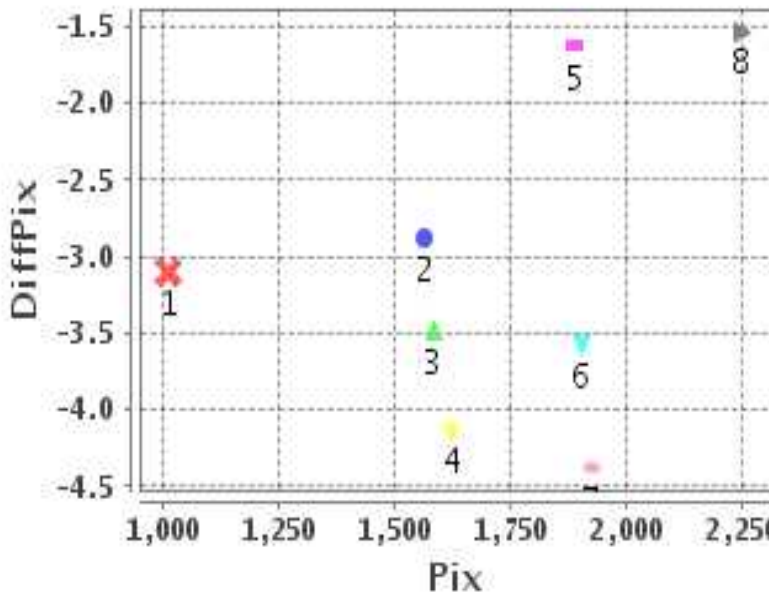
Radial Error (Km)

| | |
|------|--------|
| Mean | 12.892 |
| Min | 6.143 |
| Max | 20.552 |
| CE90 | 16.288 |

Error(Pixels) Vs. GCPPix



Error(Pixels) Vs. GCPPix



Location Accuracy

| | Mean | StdDev | RMS | Dir | * MinRMS | * MaxRMS |
|---------------|---------|--------|--------|-----|----------|----------|
| Along(Km) | 2.463 | 5.713 | 6.222 | N | 4.245 | 6.638 |
| Across (Km) | -11.630 | 3.516 | 12.150 | W | 11.478 | 12.798 |

Block-Wise Geo location Error Statistics

Location Accuracy,Scale,ID

| Scan Range-0-937; Pix Range-0-934 | | |
|-----------------------------------|---------|----------|
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--------------------------------------|---------|---------|
| Scan Range-0-937; Pix Range-934-1869 | | |
| Number of GCPs | 1 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 9.52 | N |
| Across(Mean,Dir) | -12.01 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---------------------------------------|--------|-------|
| Scan Range-0-937; Pix Range-1869-2805 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -0.71 | S |
| Across(Mean,Dir) | -10.69 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 5.14 | 28.44 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.61 | 0.00 |
| Across(Mean,Stddev) | -2.04 | 0.00 |

| | | |
|--------------------------------------|---------|----------|
| Scan Range-937-1876; Pix Range-0-934 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|------|
| Scan Range-937-1876; Pix Range-934-1869 | | |
| Number of GCPs | 3 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 3.61667 | N |
| Across(Mean,Dir) | -12.56 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.24 | 6.11 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -3.27 | 0.24 |
| Across(Mean,Stddev) | 0.92 | 0.32 |

| | | |
|--|--------|------|
| Scan Range-937-1876; Pix Range-1869-2805 | | |
| Number of GCPs | 2 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | 0.385 | N |
| Across(Mean,Dir) | -10.98 | W |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | 4.30 | 7.52 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -0.74 | 0.00 |
| Across(Mean,Stddev) | 2.75 | 0.00 |

| | | |
|---------------------------------------|---------|----------|
| Scan Range-1876-2816; Pix Range-0-934 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|--|---------|----------|
| Scan Range-1876-2816; Pix Range-937-1869 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

| | | |
|---|---------|----------|
| Scan Range-1876-2816; Pix Range-1869-2805 | | |
| Number of GCPs | -999 | |
| Location Error(Km) | | |
| Along(Mean,Dir) | -999.99 | NotAvail |
| Across(Mean,Dir) | -999.99 | NotAvail |
| Scale(Km) | | |
| Average Scale (Mean,%Variation) | -999.99 | -999.9 |
| Internal Distortion(Pixel) | | |
| Along(Mean,Stddev) | -999.99 | -999.99 |
| Across(Mean,Stddev) | -999.99 | -999.99 |

*-999 : no gcp available
* -999.99 : values are not computed